

**REMARKS**

After entry of this amendment, claims 1, 4-15, 18-26 and 31-32 will be pending.

Claims 5, 9, 22, and 27-30 stand rejected under 35 U.S.C. 112, second paragraph. Claims 27-30 stand rejected under 35 U.S.C. 101. Claims 1, 11, 12, 15, 24, 25 and 27-30 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,271,953 to Dishman et al. (hereafter Dishman). Claims 1-3, 5, 6, 9, 11, 12, 15-17, 24 and 25 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,570,695 to Pribil et al. (hereafter Pribil). Claims 4, 10, 13, 14, 18, 23 and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Pribil as applied to claims 1 and 15, and further in view of Dishman. Claims 8, 9, 21 and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Pribil as applied to claims 1 and 15, and further in view of U.S. Patent No. 5,953,146 to Shelby (hereafter Shelby).

**Rejection of Claims 5, 9, 22, and 27-30 Under 35 U.S.C. 112, Second Paragraph**

Claims 5, 9 and 22 have been amended to overcome the rejection based on the lack of antecedent basis. Additionally, the terminology “total frame area” has been replaced with “full frame”, terminology which is supported by the specification. Accordingly withdrawal of the rejection and reconsideration of these claims is requested.

Claims 27-30 have been canceled. Therefore this rejection is considered moot.

**Rejection of Claims 27-30 Under 35 U.S.C. 101**

Claims 27-30 stand rejected for claiming two different statutory classes of invention (i.e., process and device). As claims 27-30 have been canceled, this rejection is considered moot.

**Rejection of Claims Under 35 U.S.C. 102(e) and 103(a)**

Claims 1, 11, 12, 15, 24, 25 and 27-30 stand rejected under 35 U.S.C. 102(e) as being anticipated by Dishman. As claims 1 and 15 have been amended to incorporate the limitations of claims 3 and 17, respectively, and as claims 3 and 17 were not rejected as being anticipated by Dishman, Applicant submits that this rejection is moot and requests the withdrawal of the rejection and the reconsideration of the claims.

Claims 1-3, 5, 6, 9, 11, 12, 15-17, 24 and 25 stand rejected under 35 U.S.C. 102(e) as being anticipated by Pribil. Pribil discloses a system for regulating the optical alignment of two lightwaves. The first lightwave is transmitted to the optical coupler 6 from the receiving telescope 2 after passing through an optical fiber 7 attached to a fiber nutator 5. The second lightwave transmitted to the optical coupler 6 is emitted by a local laser 12. The output of the optical coupler is connected to a pair of detectors 10 and 11 that generate an error signal  $S_r$  which is used to control both the fiber nutator 5 (via a control unit 14) and the alignment of the first lightwave on optical fiber 7 (via fine alignment unit 3 and lens 4 attached to computer/regulator 18).

Applicant respectfully asserts that the Pribil patent neither discloses, nor suggests, the use of a stress-optic refractor as currently claimed in independent claims 1 and 15. As disclosed by Pribil, and as known in the art, a fiber nutator is simply an optical fiber that is attached to a mechanical deflection unit in such a way that the end of the fiber can be moved, thereby moving the position of the light beam passing through the fiber. (Column 2, lines 31-33). This allows the position of the lightwave passing through fiber 7 to be varied with respect to optical coupler 6. (Column 2, lines 26-29). For example, please see column 3, lines 33-34, which state that “the end of the fiber 7 is moved by the nutator”. This aspect of the nutator is further described in column 3, lines 41-44, which state that the fiber nutator causes the “mechanical scanning movement of the fiber end”, either “by means of a lateral displacement mechanism or by means of a bending element”. In describing the bending element approach, Pribil discloses that such elements can be produced using piezoelectric tublets with segmented electrodes fixed in one area, thus allowing the other area to move.

Thus Pribil only discloses a mechanical movement of an end of fiber 7, thereby allowing the positioning of the lightwave on coupler 6. It does not matter whether the mechanical movement of fiber 7 via nutator 5 is accomplished via lateral displacement mechanisms (such as in a CD player as noted by Pribil in column 3, lines 44-47) or by a piezoelectric bending element (column 3, lines 47-51). Nor does it matter whether the mechanical fiber nutator is replaced with an electrooptical deflector as suggested by Pribil at column 2, lines 46-51. Quite simply, Pribil neither teaches nor suggests the use of a stress-optic refractor as presently claimed.

As noted in the present application, a regulator constructed of a stress-optic refractor operates by inducing stress in the material comprising the regulator, thereby altering the

index of refraction of the material. (See, for example, the abstract and paragraphs 0009, 0027-0035, etc.). One of the noted advantages of the present invention over the prior art systems is that the use of a stress-optic refractor as the optical beam regulator allows the disclosed system to not only steer an optical beam (e.g., paragraph 0006), but also to shape the optical beam (e.g., paragraph 0007).

In the Office Action, Pribil is used as prior art for the stress-optic refractor. Although Pribil discloses the use of a mechanical fiber nutator and suggests the use of an electrooptical deflector, both well known in the art, Applicant respectfully submits that there is absolutely no disclosure, or suggestion, in Pribil of the use of an optical element whereby the index of refraction of the element is varied by controllably applying stress to the element (i.e., a stress-optic refractor).

With respect to the remaining obviousness-based rejections, Applicant notes that as all pending independent claims have been amended to include the basic limitation of a stress-optic refractor, and as none of the cited art discloses or suggests such an element, such rejections are now moot.

In summary, as none of the cited prior art, including Pribil and Dishman, disclose or suggest the use of a stress-optic refractor as an optical regulator, Applicant respectfully requests the withdrawal of the rejection of the claims and reconsideration of all pending claims.

If in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned at (415) 889-5700.

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Respectfully submitted,

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